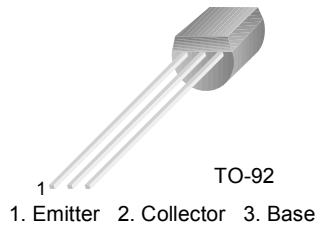


BC640

PNP Epitaxial Silicon Transistor

Switching and Amplifier Applications

- Complement to BC639



Absolute Maximum Ratings $T_a = 25^\circ\text{C}$ unless otherwise noted

Symbol	Parameter	Value	Units
V_{CER}	Collector-Emitter Voltage at $R_{\text{BE}}=1\text{K}\Omega$	-100	V
V_{CES}	Collector-Emitter Voltage	-100	V
V_{CEO}	Collector-Emitter Voltage	-80	V
V_{EBO}	Emitter-Base Voltage	-5	V
I_{C}	Collector Current	-1	A
I_{CP}	Peak Collector Current	-1.5	A
I_{B}	Base Current	-100	mA
P_{C}	Collector Power Dissipation	1	W
T_{J}	Junction Temperature	150	$^\circ\text{C}$
T_{STG}	Storage Temperature	-65 ~ 150	$^\circ\text{C}$

Electrical Characteristics $T_a = 25^\circ\text{C}$ unless otherwise noted

Symbol	Parameter	Test Condition	Min.	Typ.	Max.	Units
BV_{CEO}	Collector-Emitter Breakdown Voltage	$I_{\text{C}} = -10\text{mA}$, $I_{\text{B}} = 0$	-80			V
I_{CBO}	Collector Cut-off Current	$V_{\text{CB}} = -30\text{V}$, $I_{\text{E}} = 0$			-0.1	μA
I_{EBO}	Emitter Cut-off Current	$V_{\text{EB}} = -5\text{V}$, $I_{\text{C}} = 0$			-0.1	μA
h_{FE1} h_{FE2} h_{FE3}	DC Current Gain	$V_{\text{CE}} = -2\text{V}$, $I_{\text{C}} = -5\text{mA}$ $V_{\text{CE}} = -2\text{V}$, $I_{\text{C}} = -150\text{mA}$ $V_{\text{CE}} = -2\text{V}$, $I_{\text{C}} = -500\text{mA}$	25 40 25		160	
$V_{\text{CE}}(\text{sat})$	Collector-Emitter Saturation Voltage	$I_{\text{C}} = -500\text{mA}$, $I_{\text{B}} = -50\text{mA}$			-0.5	V
$V_{\text{BE}}(\text{on})$	Base-Emitter On Voltage	$V_{\text{CE}} = -2\text{V}$, $I_{\text{C}} = -500\text{mA}$			-1	V
f_{T}	Current Gain Bandwidth Product	$V_{\text{CE}} = -5\text{V}$, $I_{\text{C}} = -10\text{mA}$, $f = 50\text{MHz}$		100		MHz

Package Marking and Ordering Information

Device Marking	Device	Package	Reel Size	Tape Width	Quantity
BC640	BC640BU	TO-92	--	--	10,000
BC640	BC640TA	TO-92	--	--	2,000
BC640	BC640TAR	TO-92	--	--	2,000
BC640	BC640TF	TO-92	--	--	2,000
BC640	BC640TFR	TO-92	--	--	2,000

Typical Performance Characteristics

Figure 1. Static Characteristic

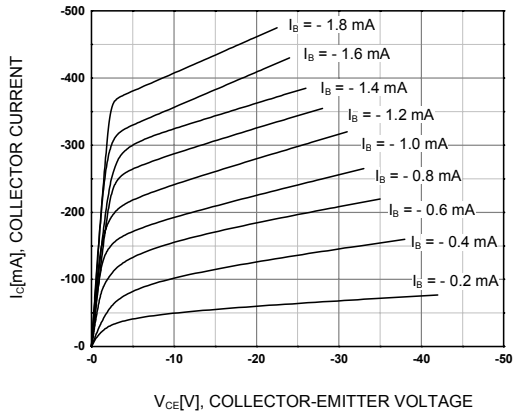
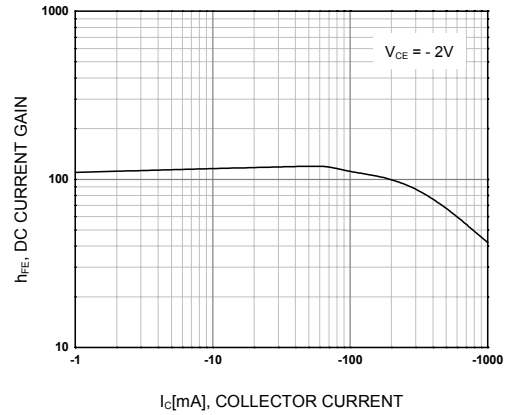


Figure 2. DC Current Gain



**Figure 3. Base-Emitter Saturation Voltage
Collector-Emitter Saturation Voltage**

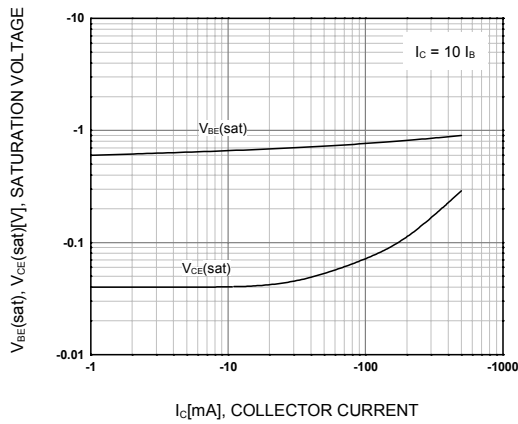


Figure 4. Base-Emitter On Voltage

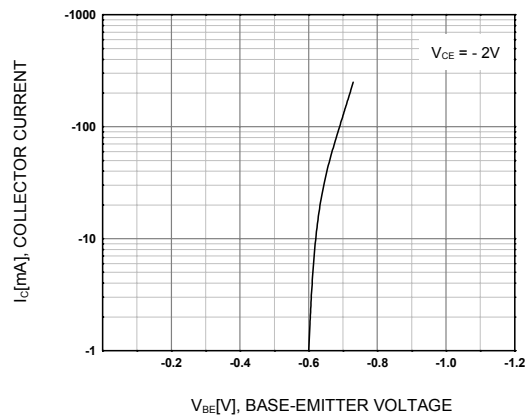
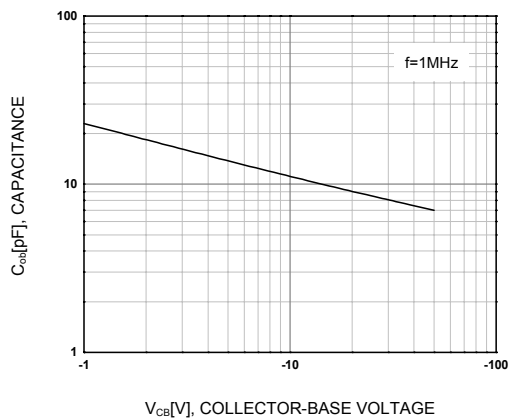
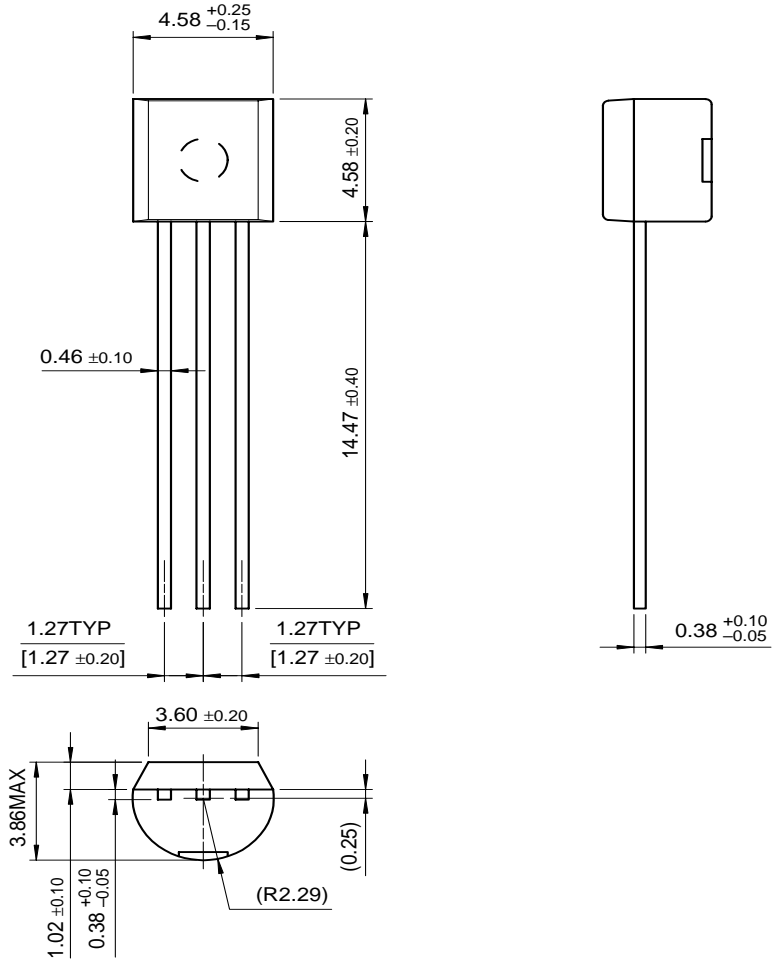


Figure 5. Collector Output Capacitance



Mechanical Dimensions

TO-92



Dimensions in Millimeters

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EcoSPARK™	I ² C™	MSXPro™	RapidConnect™	UniFET™
E ² C MOS™	i-Lo™	OCX™	μSerDes™	VCX™
EnSigna™	ImpliedDisconnect™	OCXPro™	SILENT SWITCHER®	Wire™
FACT™	IntelliMAX™	OPTOLOGIC®	SMART START™	
FACT Quiet Series™		OPTOPLANAR™	SPM™	
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Programmable Active Droop™		Power247™	SuperSOT™-3	
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